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► Case Study as teaching strategy in training of students in Library Science

Estudio de casos como estrategia didáctica en la formación del estudiantado en Bibliotecología

► *Esteban González Pérez¹*

ABSTRACT

This paper proposes a theoretical basis and some guidelines for implementing the study of cases in the academic training of students of the majors offered by the School of Library and Information Science at the University of Costa Rica. This teaching strategy can be successful in situations in which the application of theory and practice to study different subjects is required, because these subjects are a product of real situations or problems from work activity and encourage the search for solutions, creativity, negotiation, teamwork, leadership, among many other attitudes and skills. This work starts from the perspective of constructivism that promotes meaningful learning and allows teachers and students to assume different roles in the construction of new knowledge.

RESUMEN

Este ensayo propone una base teórica y algunos lineamientos para implementar el estudio de casos en la formación del estudiantado de las carreras que oferta la Escuela de Bibliotecología y Ciencias de la Información de la Universidad de Costa Rica. Esta estrategia didáctica puede ser exitosa en situaciones en que se requiere la aplicación de la teoría y la práctica para el estudio de distintos temas, ya que se desprenden de situaciones o problemas reales relacionados con la actividad laboral y fomentan la búsqueda de soluciones, la creatividad, la negociación, el trabajo en equipo, el liderazgo, entre muchas otras actitudes y habilidades. Se parte desde una perspectiva constructivista que favorece el aprendizaje significativo y permite al docente y al estudiantado asumir distintos roles en la construcción de nuevo conocimiento.

Keywords

Case studies, didactic strategies, constructivism, library science

Palabras clave

Estudios de casos, estrategias didácticas, constructivismo, bibliotecología

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1. Introduction

*Theory without practice is utopia
Practice without theory is improvisation
Anonymous*

The School of Library and Information Sciences (EBCI for its name in spanish: Escuela de Bibliotecología y Ciencias de la Información) at the University of Costa Rica (UCR) celebrated in 2014 its 25th anniversary in the training of professionals in library science and information offering two bachelors degree, one degree and a postgraduate degree. In the bachelor degree, the school has two emphases (Information Science and Educational Libraries) that share a common core of subjects until the third year, in which the student acquires the theoretical principles and practices underlying their own professional work units of information: processes, services, products, users, collections and technologies that currently face and streamline the various digital environments access to information.

Despite the history of the EBCI, the work of professional training in librarianship incurs in new challenges, and requires updating content, and different teaching strategies that promote the construction of learning and experience in the classroom and beyond. This need is due to the changes currently modifying all human activities, from information technology and communication which have greatly impacted the world of information and its way of storage and retrieval. In this context, the work of the professors, as a revitalizing aspect of the learning process, should be complemented by constantly updating their knowledge in library science and education, research and production of scientific publications and collaborative work with peers.

For this reason, this paper proposes the case study as an alternative to the professors of the School of Library and Information Science. Specifically, it poses as a teaching strategy for incorporating issues to be studied and resolved by the student, causing the search for creative solutions, decision-making, consultation and evaluation of information sources, using the previous and particular of each student, among other possibilities. In the text, they are considered theoretical, methodological and evaluative aspects for the implementation of the case studies in the university classroom.

2. The university teacher and his role in the disciplinary training

The teaching work is immersed in a constantly changing dynamics of social, political, economic and cultural transformations at the local and global levels, which must be contextualized in the learning process of each scientific discipline. In the field of library science, constant challenges in the retrieval and storage of information, the rescue of the historical documentary heritage, the technical processes using international standards and metadata as well as the incorporation of technologies, among many other issues, are added to the learning of a dynamic and embedded discipline in a transdisciplinary context.

In this field, as in all areas, the professors of the University of Costa Rica is bound to have expert knowledge in their discipline and to apply various pedagogical perspectives, methodologies and teaching techniques for the training of students with a humanistic and critical sense, committed to the solution of national problems according to their scope (UCR, 2004). It is also known that they have to incorporate technologies and exploit all the possibilities for effective communication, knowledge generation, education and development of learn to learn skills required by the students.

To the EBCI it is essential to maintain a form of teaching library science specialists to teach the courses that are distributed in the following areas: Information Processing, Information Products and Services, Administration, and Information Systems and Research. In these people is deposited the responsibility to fulfill the objectives of each course applying different teaching methodologies and evaluation.

However, it has been found from investigations carried out for the Self-Assessment Report 2007-2012 the two bachelors degree and the degree programs taught in the EBCI, that there are "deficiencies of the teachers on pedagogy for teaching LIS excessive use of lectures as a teaching strategy" (EBCI, 2013, p. 51). This shows how there is a predominance of teaching strategies from a traditional perspective, which promotes rote learning and knowledge transfer where the teacher presents the information to the students and they assume it with a low critical nature.

An educational proposal to change the position of the student who absorbs and receives knowledge passively to an active construction of this has been found in the constructivist perspective. According to Soler Fernandez (2006), constructivism:

retoma las premisas epistemológicas del paradigma "interpretativo" y las aplica al aprendizaje, considerando una actividad cognoscitiva del aprendiz, quien organiza y da sentido a la experiencia individual... es la creencia de que los estudiantes son los protagonistas en su proceso de aprendizaje, al construir su propio conocimiento a partir de sus experiencias. [takes the epistemological premises of "interpretive" paradigm and apply them in the learning process, considering a cognitive activity of the trainee, who organizes and gives meaning to the individual experience ... it is the belief that students are the protagonists in the learning process, to construct their own knowledge from their experiences.] (p. 29)

The student, through the integration of new information and previous knowledge gained throughout his life, manages to reconcile new learning.

The case studies (EC from its name in spanish: *estudios de caso*) is a constructivist teaching strategy that allows invigorate the teaching-learning process, the role of the person responsible for developing their knowledge and skills, and the teacher as a mentor and counselor of the strategy. This last one has a responsibility to build based scenarios on real problems that are developed in the information units which can be brought to the classroom by the EC strategy for finding solutions by conscientious student.

3. Case studies (EC) as a teaching strategy

A definition of EC is presented by Eisenhardt who proposes it as

una estrategia de investigación dirigida a comprender las dinámicas presentes en contextos singulares combinando distintos métodos para la recogida de evidencia cualitativa y/o cuantitativa con el fin de describir, verificar o generar teoría [a strategy of research aimed at understanding the dynamics present in unique contexts combining different methods for collecting qualitative evidence and / or quantitative in order to describe, verify or generate theory] (quoted by Martínez Carazo, 2006, p. 174).

In the educational context is an ideal teaching and research strategy to make the connection between theory and practice in which the student engages consciously and responsibly throughout the process, with their own learning.

As a strategy, the teacher designs and adapts the case based in the learning context of the students and their characteristics, as the learning content that meet the objective. The students are in contact with a real situation that it can be adapted to different levels of analysis and completeness. The intention is that the real situation includes a problem, an opportunity, a challenge, or the making of an informed decision from the consulted theory and experience of students.

According Elizarrarás Velázquez (2007) the case may be fictional, constructed or adapted by teachers, incorporating descriptions of facts, events, reviews and opinions that may be challenging for the student. We recommend taking into account the training and utilization will be more effective the greater the connection to the real world. So a good EC must be:

*Verosímil*², de modo que su argumento sea posible, que quede la impresión de que lo ha vivido alguien; *provocador*, que la historia que cuenta estimule la curiosidad e invite al análisis de sus personajes; *conciso*, sin adornos literarios ni exceso de tecnicismos; cercano, con narraciones y contextos del entorno más cercano, de la propia cultura; *ambiguo*, sin predisponer a tomar partido en apoyo de unos contra otros. El papel de cada personaje debe ser tomado y analizado con igual interés. [*credible*, so your argument be possible, to leave the impression of someone who has lived it; *provocative*, that the story stimulates curiosity and invites the analysis of its characters; *concise*, without trimmings or excess of literary technicalities; *close*, with stories and contexts of the immediate environment, of its culture; *ambiguous*, without prejudice to take sides in support of each other. The role of each character must be taken and analyzed with equal interest.] (Elizarrarás Velázquez, 2007, p. 38).

An EC involving the features above lets you turn the classroom into a laboratory for exploration of different realities concerning disciplinary task: through discussion, explanation, research, drama and other activities, it approaches as much as possible to the employment reality and the search for solutions to problems that concern to library science.

² Emphasis added as it comes in the original text.

Cases can be used for various purposes that can therefore vary in their approach, duration and completeness of the contribution of the student. According to the Tecnológico de Monterrey (2012), three types most commonly used cases are identified:

Cases focused on the study of descriptions: the aim is for students to analyze and describe an event or situation without proposing solutions.

Troubleshooting cases: their focus is on decision making that requires the solution of problems in the case.

Cases focused on the simulation: the aim is for students to get involved in the environment in which the event takes place dramatizing the situation and playing the role of the characters involved in it.

4. Methodology for case studies

In this strategy the teacher person assumes the role of facilitator and motivator of the discussion and analysis of the case, so that its role is vital in formulating good questions that encourage reflection and clarification of ideas. Moreover, being the person who facilitates the case, he or she should promote collaborative work between students members of a group, identifying gaps in skills needed for teamwork. The teacher can: support the development of leadership attitudes, assign roles, identify which are the student's strengths and how they can make them work for the benefit of all; also, support the group reflection.

Using case studies as a strategy, it is necessary that teachers take into account the following aspects (Tecnológico de Monterrey, 2012):

Learning Objective (s) expected to be achieved.

Number of sessions (or face-to-face classes) of the course that will be used to work the case. It can involve the extracurricular work related to the search for information, activities and advance planning, and preparation of documents and presentation of results.

Type of case and when it is going to be used (to introduce theoretical concepts or to implement the application of these concepts).

Percentage of the course grade that will be accredited to work with cases and how it will be evaluated.

At the time of presenting the EC to the group, it is recommended that the teacher announces the use of this strategy and provides an inducement for people to feel comfortable with the methodology and to give optimum performance. It should be considered the maturity level of the students and the academic level at which the course belongs. Furthermore, it is necessary to organize the activities such that a requirement be for the next case.

Depending on the case and the topic to which it responds, it may require consultation with specialists from other disciplines regarding possible solutions or advice for the accomplishment of the activities. The intervention of these outsiders can generate a better use of the learning experience. See, for example, a case referred to a conservation of bibliography, a technological innovation in a library, a tender for sale of services, an infrastructure adaptation, among many other examples that may involve a professional from another discipline and provide valuable elements for discussion and decision making.

The EC can demand the teacher who is planning more planification work than the one invested in a master class. First, for their design it must find or create the case that relates exactly to the learning objectives; it must prepare complementary literature that can be used, and it must organize the dynamics in the classroom to address it with the students. Then, it requires resolving all questions that arise from experience and complement it with theory. As a last step, it must perform the evaluation, closure and return the resulting products to their qualifications.

The effort and dedication that make the teacher will be rewarded with a more useful and with more feedback from the students. The experiences of implementing the EC can increase the knowledge of the teacher since this is integrated with their students into the dynamics of learning construction. For this, there is no doubt that it is a greater benefit than other traditional and memory strategies.

In the first moment the person gives the case, the students are divided into subgroups, they analyze the information it contains, they identify their learning needs, they seek for themselves the theory needed to solve the problem and solve it. In more detail, within the activities that the students do in contact with a case can be mentioned:

- Read, write and analyze the case, placed in the context, identify characters and relevant topics.
- Reflect on the questions raised and possible solutions with ideas, solutions, different interpretations and opinions.
- Consult the course contents, search for information in the library and/or on the Web and consult experts on the subject, in relation to the context and the doubts and inquiries that must be met for the resolution of the case.
- Link the case with their experience, with the learning context and the course content.
- Produce a solution to the case according to the evaluation criteria and present it to the group.

5. Steps to addressing the EC:

The cases can be adapted to different contexts and training purposes. Therefore, it can not be think it of a standard form of use, hence the next the sequence steps for approaching the EC with students are recommended.

a) Presentation of the case: it is recommended that the students do a thorough reading of the case provided by the teacher. In this first approach it sets aside the theory to focus on the raised situation. Key moments, and the relevant facts and circumstances of each of these events are identified. To enrich the understanding of the case, this process it can be supported with various documentary resources, eg. a video, a newspaper article, an institutional document to provide data for the discussion, among other possible. (Annex 1, page 11).

b) Analysis: All information provided by the case must be considered for the analysis. At this stage it is synthesized in a few lines the proposed situation by removing the idea or ideas which, in the opinion of the group, better define the situation presented. It should clarify the characteristics of the characters involved in the case and develop a timeline of events. Also, it can add the first hypothesis and alternative solutions.

c) Identification of the basic aspects of the case: aspects such as objectives, issues, risks, opportunities, values, attitudes, and alternatives are identified. At this stage it is necessary to discover the key facts of the situation and the significant relationships established in these.

d) Bibliographic support: it should be considered the consulting sources of information that can help solve the case. It is essential that decisions made are supported by bibliographic sources and non-bibliographic information such as consulting an expert on the subject.

e) Resolution of the case: the students assume the role of decision makers and the support it well. In the work of supervision, the teacher must identify the level of exhaustiveness that students are implementing; moreover, the teacher must also motivate with reflection questions or comments to help the students make a deep analysis of the case to be solved.

f) Development of recommendations: being the decision made on the case, the students can make recommendations to support the decision. Thus the ability to synthesize and propose viable alternatives to different situations is generated, which will be very useful to students in their professional future.

g) Final review of the case and exposure: the students conduct a final review of the case and prepare the exhibition, considering the following scheme:

- Narration of the facts and events developed in the case.
- Interpretation of the case made by the group.
- Possible ways to solve the case.

Depending on the type of case being used, a way of present it is through dramatization, where students adopt a character and represent it. It can also organize a plenary which, according to Noeguero López (2007), provides a neat summary of the interpretations of the case and its possible solutions while studying the viability. With this last technique it is reached in the group the choosing of the solutions considered most relevant and the relationship between the proposed case, and the reality that the students will find in the future is discussed.

h) Closure and evaluation: the teacher is in charge of the comments of the closure of the case and the application of the evaluation and return of products ordered by students (a research report, a portfolio, a scheme, a conceptual map, etc.).

The EC can generate significant benefits to the students, specifically for the development of skills that will be of great help in their professional future such as equipment and management decision making. In addition, it may sense a voluntary contribution of more time as "the decision of a case they may be more attractive than lectures, reading books or academic texts and assessments rote" (Martínez Sánchez, 1999, p. 25).

6. Evaluation of the EC strategy:

Working with this participatory and collaborative methodology extends the alternatives assessment. The teacher can apply their general assessment and encourage the students' self-assessment (knowledge themselves) and coevaluation (peer-assessment) during the stages of resolution of the case or after the activity. The evaluation could be divided into three stages:

- 1) Identification of the problem
- 2) The process of gathering information
- 3) The proposed solutions

In the evaluation made by the teacher, the use of rubrics or evaluation matrices is recommended to measure the students' performance. Some aspects that can be assessed in them are: argumentation the problem, relevance of the consulted literature, the theoretical framework related to the topic, discussion of results, conclusions, writing and spelling, drawing up charts and graphs or support requested, compliance with deadlines and activities, among others. For example, an overall weight of the case through the section can be:

Excelent	Improvable	Deficient
The students can analyze the case and make a reasoned solution.	The students know to propose the problem but do not know how to fix it.	The students do not know how to deal with the case.

For these situations, in an **excellent** performance the teacher positively reinforces the learning achieved and highlights the success of the results. In an **improvable** performance the teacher should make awareness that, to solve a case, it is not enough to understand the theoretical

foundations, but also learn to implement them. For a **poor** performance aspects such as writing, the terminology used, the technical content and technical implementation are not appropriate to their level, the teacher should make an assessment and find specific situations that hindered the resolution of the case and reflect on qualifying.

7. Conclusions

The EC is a teaching strategy that is approached from a constructivist perspective of learning. For this, it must be considered aspects such as: a strategy focused on individual student rather than the teacher; spaces for discussion and knowledge building; finding sources of information from the group autonomously, without giving the sources; the teacher as a facilitator and guiding the process; and an evaluation to allow the assessment of the issues not only from the quantitative but also in qualitative terms, as attitudes and values.

The preparation of a case involves time that the teacher must invest in the search of that reality event that meets the learning objectives, or in the development of a fictional situation. It is necessary that the person teaching values the type of cases discussed above to make considerations for processing and to determine the scope of the strategy. The time spent, that is more than preparing a lecture, it can be seen as a winning at the end of the strategy.

In addition, the implementation of an EC also involves the time required for the group to work on face-to-face class and to value the time that will be required in an extra class way. It is recommended that the teacher has the ability to negotiate with the student, assessing the possibilities of working together during outside class hours and the technological tools that could support them to work the case of a deferred basis (a blog, a wiki, a text document online discussion forums, etc.). The teacher in his or her role of facilitator can provide guidance to support students to achieve the stages of solving the case. Thus, the facilitator from the role of teacher is actively involved and learns from the experience of each group.

The evaluation rubrics can help the students to appreciate the criteria that will be considered, both in terms of attitudes and the contribution that is made to group and individual level in the resolution of EC. Thus the commitment from the beginning may be greater if the student is aware of the way how it is going to be evaluated.

The EC can contribute to the teaching of Library Science from a series of positive experiences in the training of students in the various courses of the curriculum. Each course addresses the development of theoretical and practical knowledge that are required in the workplace. Therefore, an EC can help the students change their passive role to an active role in learning.

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9. **Annex****Annex 1****Case study:****Challenges of the University Library: from the traditional to the virtual****Introduction:**

The next event is intended to assessment of a reality faced by the university library and the search to solutions to it. With this aim, it is recommend a critical and analytical reading, extracting the main ideas considered as problems, the role of the characters involved and the resources available and non-available of the institution.

Objectives:

- To identify the role played by ICT (information and communication technologies) in the process of library products and services automation.
- To determine the digital skills that any person specialist in Library Science should possess and/or develop in their professional activity.

Roles:

For the resolution of this case, **students** meet in subgroups for reading it and make a plenary. Active participation in the discussion, exchange of ideas and collaboration in the search for solutions will be considered in the evaluation. Each group can ask specific questions to the **teacher** about elements that help to expand and focus the discussion in the search for alternative solutions.

General information:

- Each team will be formed by 4 students.
- The time for analysis, search for solutions, report writing and presentation will be 2 face-to-face classes (8 contact hours). Extra class work for the literature review and progress in the answers to the questions is recommended.
- The group will prepare a text document with a cover, an introduction, questions and possible solutions, bibliography and appendices. In addition, the presentation can be supported with a presentation of slides or other material homemade.

Evaluation:

The report must contain the following:

- Arguments of the problem
- Resolution and discussion of the questions raised
- Conclusions
- Correct grammar and spelling
- Consulted bibliography (minimum 2 sources of information)

Value: 20%. It breaks down as follows:

Written report: 10%

Exhibition: 5%

Co-evaluation: 5%. (Proactive participation in the whole process will be evaluated).

CASE REPORT

The “Efrain Rojas Rojas” University Library of the University of Costa Rica has 20 years existence. Since its inception, it is specialized in providing information services to a diverse community made up of university teachers and administrators, researchers’ staff and students from different disciplines. So its target population may amount to more than 25 000 people engaged in academic and research work.

The collection of the Library consists of the following:

- General collection: 35 000 copies
- Final work of graduation: 1500 copies
- UCR academic journals: 8500 scientific articles
- Subscription journals: 450 titles
- Multimedia materials: 7000 tangible objects (video, audio, photos)
- Research reports: 850 project documents

Among the services provided by the Library include:

- 5 terminals with Internet access
- Card catalog with over 50 000 cards
- Printed monthly newsletter
- Training of Users
- Physical location of documents in other libraries
- Loan of bibliographic material
- Guide to the users and resolution of queries
- Accessible services to people with disabilities
- Individual and group study rooms
- Audiovisual materials center (VHS, DVD, CD)

The organization of the library is divided into:

- Coordination (General Coordinator and 1 Head Department)
- Reference Department: 5 people
- Technical Processes Department: 5 people
- Circulation and Loan Department: 5 people
- Selection and Procurement Department: 5 people

In the last 10 years, the use of Internet as the primary mean of access to information has won in an extended mode the taste and preference of the university community, making the user statistics generated by different Departments of the Library fall alarmingly. This situation is not unaware to the university authorities, who have supported the recommendations of the Coordination of the Library to keep the budget and try to reverse the problems of the low influx of users in person; still, the outlook is not encouraging and there could be cuts.

One aspect that stands out is that the library has not ventured into the field of technology and automation to manage new services and information products. This has been to remain faithful to a library tradition inherited from previous policies and administrative procedures that give priority to the printed document and users face service in the facilities of the library.

From the above, the following questions arise:

These generators questions must be answered in writing and delivered within the report.

What has been the main problem in terms of low/no assistance of library users?

What alternative solution or hypothesis is initially envisioned to position back to the library as an intermediary between the user and the information?

What levels of responsibility have all the people who work in the library? Analyze each position and breakdown activities belong. Identify those that are part of the problem.

What is the contribution that the automation can provide services and products to the Library?

ACTIONS BY DEPARTMENT.

In subgroups and assigning each a specific department it is analyzed the following questions to outline proposals for solutions.

1) What alternative solutions to position the university community in the department proposes? Describe new services/functions/policies and the relationship that it must be established with other departments (if required) to make them function properly.

2) What material resources will demand the department? Make a real estimate of the budget required for the purchase of materials and other actions to be carried out.

3) If required digitizing various printed materials, which will it be? What considerations should be taken on the issue of copyright? And what criteria will be taken into account digitization? Assess quality aspects, applications and equipment.


PLENARY

Each department will make a statement of the facts and the most relevant assessments of the reflection questions. In addition, it will present alternative solutions that contribute to benefit the library. The answers should be written in the report.




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2011

Origin: response to a necessity

In 2011, the School of Library and Information Science (EBCI) of the University of Costa Rica (UCR) recognized the importance of creating new and better ways to disseminate research. e-Ciencias de la Información is the answer to the current context marked by greater **openness**, **flexibility** and **rigor** in data verification and processing.

2013

Journal of the UCR

e-Ciencias de la Información is a scientific journal that addresses the new issues of development and research in Information Science at national and international levels. Thus, it significantly contributes to the progress of this discipline. For their quality parameters, it belongs to the group of the most important magazines of the UCR and it is widely indexed in major catalogs.

Currently

International Positioning

The journal publishes works in the following areas, related directly to the Information Sciences:

Library Science, Documentation, Information and Communications Technologies, Research, Statistical Analysis and Bibliometrics, Archiving, Information Systems, Information, Communication and School Libraries.

